

SEQUENCE LISTING

1- porcine nucleotide sequence alpha2 delta-1

GGGGATTGATCTTCGATCGCGAAGATGGCTGCTGGCTGCCTGCTGGCCTTGA CTCTGACAC
TTTTCCAATCTTTGCTGATCGGTCCCTCATCGCAGGAGCCGTTCCCGTCGGCCGTC ACTAT
5 CAAGTCATGGGTGGATAAAATGCAAGAAGACCTTGTCAACCCTGGCAAAAACAGCAAGTGG A
GTCAATCAGCTTGTGATATTTATGAAAAATACCAAGATTTGTATACTGTGGAACCAAATA
ATGCACGCCAGCTGGTGGAAATTGCAGCCAGGGATATTGAGAACTTCTGAGCAACAGATC
TAAAGCCCTGGTGCGCCTAGCTTTGGAAGCAGAGAAGGTTCAAGCAGCCCACCAGTGGAGA
GAGGATTTTGCAAGCAATGAAGTTGTCTACTACAATGCAAAGGATGATCTCGATCCTGAAA
10 AAAATGACAGTGAGCCAGGCAGCCAGAGGATAAAACCTGTTTTTATTGATGATGCTAATTT
TGGGCGACAGATATCTTATCAGCATGCAGCAGTCCATATTCCCACCGACATCTATGAGGGC
TCAACAATTGTGTTAAATGAACTGAACTGGACAAGTGCCTTAGATGAAGTTTTCAAGAAAA
ATCGAGAGGAAGATCCCTCATTATTGTGGCAGGTGTTTGGCAGTGCCACAGGCCTGGCCCG
GTATTATCCAGCTTCTCCATGGGTGATAACAGTAGAACTCCAAACAAGATTGACCTTTAT
15 GATGTACGAAGGAGACCATGGTACATCCAAGGAGCTGCATCTCCTAAAGATATGCTTATTC
TGGTGCACGTGAGTGAAGTGTTAGTGGTTTGACGCTTAAACTGATCCGAACATCTGTCTC
TGAAATGTTGGAAACCCTCTCAGATGACGATTTTGTGAATGTAGCTTCATTTAACAGCAAT
GCCCAGGATGTAAGCTGTTTTCAACACCTTGTCCAAGCAAATGTAAGAAATAAGAAAGTGC
TGAAAGATGCAGTTAATAATATCACAGCAAAAGGAATCACAGATTACAAGAAGGGCTTTAG
20 TTTTGCTTTTGAACAACCTGCTTAATTATAACGTTTCTAGAGCCAACTGCAATAAGATTATC
ATGTTGTTTACCGATGGAGGAGAAGAGAGAGCTCAGGAGATATTTGCCAAATACAACAAAG
ACAAAAAAGTACGTGTATTCACATTTTCAGTTGGTCAACATAATTATGACAGAGGACCTAT
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AGAATCAATACTCAGGAATATTTGGATGTTCTGGGAAGACCAATGGTTTTAGCAGGAGACA
25 AAGCTAAGCAAGTCCAGTGGACAAACGTGTACCTGGATGCACTGGAACCTGGGACTTGT CAT
TACTGGAACCTCTTCCGGTCTTCAACATAACCGGCCAAAATGAAAATAAGACGAACTTAAAG
AACCAGCTGATTCTTG GTGTGATGGGAGTTGATGTATCTTTGGAAGATATTAAAAGACTGA
CACCACGTTTTTACACTGTGCCCCAATGGCTATTACTTTGCAATTGATCCTAATGGCTATGT
TTTATTACATCCAAATCTTCAGCCAAAGAACCCCAAATCTCAGGAGCCAGTAACCTTGGAT
30 TTCCTTGATGCAGAATTAGAGAATGATATTAAAGTGGAGATCCGAAATAAAATGATAGATG
GAGAAAGTGGAGAAAAAACATTGAGAACTCTGGTTAAATCTCAAGATGAGAGATATATTGA
CAAAGGAAACAGGACATATACATGGACTCCTGTCAATGGCACAGATTACAGTTTGGCCTTG

GTATTACCAACCTACAGTTTTTACTATATAAAAGCCAAAATAGAAGAGACAATAACTCAGG
CCAGATCAAAAAAGGGCAAAATGAAGGATTCAGAAACACTGAAGCCTGATAATTTTGAAGA
ATCTGGCTATACATTCATAGCACCAAGAGACTACTGCAATGACCTTAAAATATCAGATAAT
AATACCGAATTTCTTTTAACTTTAATGAGTTTATTGATAGAAAACTCCAAACAACCCGT
5 CATGCAACACAGATTTGATTAATAGAGTCTTGCTGGATGCGGGCTTTACAAATGAACTTGT
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10 GTAGAAATATACATCCAAGGAAAACTTCTTAAACCTGCAGTTGTTGGAATTAAAATTGATG
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ACCCAAGTTTGATGAGACACCTGGTTAATATATCAGTTTATGCTTTTAAACAAATCTTACGA
15 TTATCAGTCAGTGTGTGAGCCTGGTGCTGCACCAAAACAAGGAGCAGGACATCGCTCAGCA
TATGTGCCATCAATAGCAGACATCTTACACATTGGCTGGTGGGCCACTGCAGCTGCATGGT
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TATTTCTTTGATAATGATAGCAAATCCTTCAGTGGGGTCTTGGACTGTGGTAACTGTTCCA
20 GAATCTTTCACGTTGAAAACTTATGAACACCAACTTAATATTCATAATGGTTGAGAGCAA
AGGGACTTGTCTTGTGACACACGATTGCTCATACAAGCTGAGCAGACTTCTGACGGTCCA
GATCCTTGTGATATGGTTAAGCAACCCAGATACCGAAAAGGGCCTGATGTCTGTTTTGATA
ACAATGCCTTGGAGGATTATACCGACTGTGGTGGTGTCTTGGATTAAATCCCTCCCTGTG
GTCCATCTTCGGAATCCAGTGTGTTTTACTTTGGCTTTTATCTGGCAGCAGACACTACCAG
25 TTATGACCCTTCTAAAACCAAATCTGCATATTAACTTCAGACCCTGCCAGAATAGGAGCC
CTCAATTGCATTAAAATAGGGTAACTGCAGAATCAGCAGAACTCTAGCTGGGCCCATCCC
ATGGCATCAATCTCAGACTCATAAGGCACCCACTGGCTGCATGTCAGGGTGTGAGATCCTG
AACTTGTGTGAATGCTGCATCATCTATGTATAACATCAGAGCAAAATTCTATACCTATTC
TATTGGAAAATTTGAGAATTTGTTGTTGCATTGTTGGTGATTACATGTAAAAGGGCTCCCC
30 ACACAGTTGTGTATGAATCACGCAAATTGTCTTGATTTTGACTTGCTGCAATCCTTGTCTT
TTTACCAAGAAAATCTCTAGAGGGAAAAAAAAGTCTTTTTTTTCTTCACTAATTCTGCT

ACAAATTATTTCTGCTTGGAGTAGTTATTATTAATAATATATATATAGAGAGAGAGAGA
GAGAATTAACATTGGTGTAACTCTGTCAAAATAGAAATAATGGCTTATTTTCTACAAAAA

2 - porcine nucleotide sequence

5 ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTTGCTGATCGGTC
CCTCATCGCAGGAGCCGTTCCCGTCGGCCGTCACTATCAAGTCATGGGTGGATAAAATGCA
AGAAGACCTTGTCAACCCTGGCAAAAACAGCAAGTGGAGTCAATCAGCTTGTGATATTTAT
GAAAAATACCAAGATTTGTATACTGTGGAACCAAATAATGCACGCCAGCTGGTGGAAATTG
CAGCCAGGGATATTGAGAACTTCTGAGCAACAGATCTAAAGCCCTGGTGCCTAGCTTT
10 GGAAGCAGAGAAGGTTCAAGCAGCCCACCAGTGGAGAGAGGATTTTGCAAGCAATGAAGTT
GTCTACTACAATGCAAAGGATGATCTCGATCCTGAAAAAATGACAGTGAGCCAGGCAGCC
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TGCAGCAGTCCATATTCCCACCGACATCTATGAGGGCTCAACAATTGTGTTAAATGAACTG
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15 TGTGGCAGGTGTTTGGCAGTGCCACAGGCCTGGCCCGGTATTATCCAGCTTCTCCATGGGT
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20 CACCTTGTCCAAGCAAATGTAAGAAATAAGAAAGTGCTGAAAGATGCAGTTAATAATATCA
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25 AGGTTATTATTATGAAATTCCTTCCATTGGAGCAATCAGAATCAATACTCAGGAATATTTG
GATGTTCTGGGAAGACCAATGGTTTTAGCAGGAGACAAAGCTAAGCAAGTCCAGTGGACAA
ACGTGTACCTGGATGCACTGGAAGTGGGACTTGTCTTACTGGAAGTCTTCCGGTCTTCAA
CATAACCGGCCAAAATGAAAATAAGACGAACTTAAAGAACCAGCTGATTCTTGGTGTGATG
GGAGTTGATGTATCTTTGGAAGATATTAAGAACTGACACCACGTTTTTACACTGTGCCCCA
30 ATGGCTATTACTTTGCAATTGATCCTAATGGCTATGTTTTATTACATCCAAATCTTCAGCC
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GAACTCTGGTTAAATCTCAAGATGAGAGATATATTGACAAAGGAAACAGGACATATACATG
GACTCCTGTCAATGGCACAGATTACAGTTTGGCCTTGGTATTACCAACCTACAGTTTTTAC
TATATAAAAGCCAAAATAGAAGAGACAATAACTCAGGCCAGATCAAAAAGGGCAAAATGA
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5 AAGAGACTACTGCAATGACCTTAAAATATCAGATAATAATACCGAATTTCTTTTAACTTT
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10 AAAGAAGTCTAGATAACGATAACTATGTTTTCACTGCTCCCTACTTTAACAAAAGTGGACC
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15 TATACTAACCAGATTGGAAGGTTTTTTGGAGAGATTGACCCAAGTTTGATGAGACACCTGG
TTAATATATCAGTTTATGCTTTTAACAAATCTTACGATTATCAGTCAGTGTGTGAGCCTGG
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20 TCTGTCAAAGCAGAGTTGCATTACTGAACAAACCCAGTATTTCTTTGATAATGATAGCAA
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ATTGTGA

25 **3 - porcine nucleotide sequence**

ATGGCTGCTGGCTGCCTGCTGGCCTTGA CTCTGACACTTTTCCAATCTTTGCTGATCGGTC
CCTCATCGCAGGAGCCGTTCCCGTCGGCCGTC ACTATCAAGTCATGGGTGGATAAAATGCA
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30 CAGCCAGGGATATTGAGAACTTCTGAGCAACAGATCTAAAGCCCTGGTGC GCCTAGCTTT
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TGCAGCAGTCCATATTCCCACCGACATCTATGAGGGCTCAACAATTGTGTAAATGAACTG
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5 TGATAACAGTAGAACTCCAAACAAGATTGACCTTTATGATGTACGAAGGAGACCATGGTAC
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10 CAGCAAAAGGAATCACAGATTACAAGAAGGGCTTTAGTTTTGCTTTTGAACAACTGCTTAA
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15 GATGTTCTGGGAAGACCAATGGTTTTAGCAGGAGACAAAGCTAAGCAAGTCCAGTGGACAA
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20 AAAGAACCCCAAATCTCAGGAGCCAGTAACCTTGGATTTCTTGATGCAGAATTAGAGAAT
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25 AGGATTCAGAAACACTGAAGCCTGATAATTTTGAAGAATCTGGCTATACATTCATAGCACC
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30 CCCAAAGAGGCTGGAGAAAATTGGCAAGAAAACCCAGAAACATATGAGGACAGCTTCTATA
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TATACTAACCAGATTGGAAGGTTTTTTGGAGAGATTGACCCAAGTTTGATGAGACACCTGG
5 TTAATATATCAGTTTATGCTTTTAAACAAATCTTACGATTATCAGTCAGTGTGTGAGCCTGG
TGCTGCACCAAAACAAGGAGCAGGACATCGCTCAGCATATGTGCCATCAATAGCAGACATC
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GTTTGACCTTTCCACGACTTCTTGAAGCAGTTGAGATGGAAGATGATGACTTTACCGCCTC
TCTGTCAAAGCAGAGTTGCATTACTGAACAAACCCAGTATTTCTTTGATAATGATAGCAAA
10 TCCTTCAGTGGGGTCTTGGACTGTGGTAACTGTTCCAGAATCTTTCACGTTGAAAACTTA
TGAACACCAACTTAATATTCATAATGGTTGAGAGCAAAGGGACTTGTCTTGTGACACACG
ATTGCTCATAACAAGCTGAGCAGACTTCTGACGGTCCAGATCCTTGTGATATGGTTAAGTGA

4 - porcine nucleotide sequence

15 ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTGTGCTGATCGGTC
CCTCATCGCAGGAGCCGTTCCCGTCGGCCGTCACTATCAAGTCATGGGTGGATAAAATGCA
AGAAGACCTTGTCAACCTGGCAAAAACAGCAAGTGGAGTCAATCAGCTTGTGATATTTAT
GAAAAATACCAAGATTTGTATACTGTGGAACCAAATAATGCACGCCAGCTGGTGGAAATTG
CAGCCAGGGATATTGAGAACTTCTGAGCAACAGATCTAAAGCCCTGGTGCGCCCTAGCTTT
20 GGAAGCAGAGAAGGTTCAAGCAGCCCACCAGTGGAGAGAGGATTTTGCAAGCAATGAAGTT
GTCTACTACAATGCAAAGGATGATCTCGATCCTGAAAAAATGACAGTGAGCCAGGCAGCC
AGAGGATAAAACCTGTTTTTATTGATGATGCTAATTTTGGGCGACAGATATCTTATCAGCA
TGCAGCAGTCCATATTTCCACCGACATCTATGAGGGCTCAACAATTGTGTTAAATGAACTG
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25 TGTGGCAGGTGTTTGGCAGTGCCACAGGCCTGGCCCGGTATTATCCAGCTTCTCCATGGGT
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ATCCAAGGAGCTGCATCTCCTAAAGATATGCTTATTCTGGTCGACGTGAGTGAAGTGTTA
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30 CACCTTGTCCAAGCAAATGTAAGAAATAAGAAAGTGCTGAAAGATGCAGTTAATAATATCA
CAGCAAAAGGAATCACAGATTACAAGAAGGGCTTTAGTTTTGCTTTTGAACAACTGCTTAA
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5 ACGTGTACCTGGATGCACTGGAAGTGGGACTTGTCTTACTGGAAGTCTTCCGGTCTTCAA
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10 GATATTAAAGTGGAGATCCGAAATAAAATGATAGATGGAGAAAGTGGAGAAAAACATTCA
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15 AAGAGACTACTGCAATGACCTTAAAATATCAGATAATAATACCGAATTTCTTTTAACTTT
AATGAGTTTATTGATAGAAAACTCCAAACAACCCGTCATGCAACACAGATTTGATTAATA
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AAACATCAAGGGAGTGAAAGCACGGTTTGTTGTAAGTGTGAGGGATTACCAGAGTTTAT
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20 AAAGAAGTCTAGATAACGATAACTATGTTTTACTGCTCCCTACTTTAACAAAAGTGGACC
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25 TATACTAACCAGATTGGAAGGTTTTTTGGAGAGATTGACCCAAGTTTGATGAGACACCTGG
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30 TCTGTCAAAGCAGAGTTGCATTACTGAACAAACCCAGTATTTCTTTGATAATGATAGCAAA
TCCTTCAGTGGGGTCTTGGACTGTGGTAACTGTTCCAGAATCTTTCACGTTGAAAACTTA
TGAACACCAACTTAATATTCATAATGGTTGAGAGCAAAGGGACTTGTCTTGTGACACACG

ATTGCTCATACAAGCTGAGCAGACTTCTGACGGTCCAGATCCTTGTGATATGGTTAAGCAA
CCCAGATACCGAAAAGGGCCTGATGTCTGTTTTGATAACAATGCCTTGGAGGATTATACCG
ACTGTGGTGGTGTTCCTTGA

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5 - porcine amino acid sequence alpha2 delta-1

MAAGCLLALTLTLFQSLIGPSSQEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEV
VYNAKDDLDPEKNDSEPGSQRIKPVFIDDANFGRQISYQHAHVHIPTDIYEGSTIVLNEL
10 NWT SALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFA KYNKDKKVRVFTFSVGQHN YDRGPIQWMACENKGYYYEIP SIGAIRINTQEYL
DVLGRPMVL AGDKAKQVQW TNVYLDAL ELGLVITGTLPVFNITGQENKTNLKNQLILGVM
15 GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQKPNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTLVSQDERYIDKGNRTYTWTVPVNGTDYSLALVLPTYSFY
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NEFIDRKTPNPNPCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVT DGGITRVY
PKEAGENWQENPETYEDSFYKRS LDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
20 LLKPAVVGIIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSIADI
LHIGWWATAAAWSILQQFLLSLTFPRLL EAVEMEDDDFTASLSKQSCITEQTQYFFDND SK
SFSGVLDCGNC SRI FHVEKLMNTNLIFIMVESKGTCPCDTRLLIQAEQTS DGPDP CDMVKQ
PRYRKGPDVCFDNNALEDYTD CGGVSGLNPSLWSIFGIQCVLLWLLSGSRHYQL

25

6 - porcine amino acid sequence

MAAGCLLALTLTLFQSLIGPSSQEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEV
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30 NWT SALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
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ERAQEIFAKYNKDKKVRVFTFSVGQHNYDRGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTVNYLDALELGLVITGTLPVFNITGQENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTL VKSQDERYIDKGNRTYTWTVPVNGTDYSLALVLPTYSFY
5 YIKAKIEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTTEFLNLF
NEFIDRKT PNNPSCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVT DGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
LLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNI SVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSIADI
10 LHIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDND SK
SFSGLDCGNC SRI FHVEKLMNTNLI FIMVESKGTCPCDTRL

7 - porcine amino acid sequence

MAAGCLLALTLTLFQSL LIGPSSQEPFPSAVTIKSWVDKMQEDLVT LAKTASGVNQLVDIY
15 EKYQDLYTVEPNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQRIPVFID DANFGRQISYQHA AVHIPTDIYEGSTIVLNEL
NWT SALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVR RPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLET L SDDDFVN VASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTD GGE
20 ERAQEIFAKYNKDKKVRVFTFSVGQHNYDRGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTVNYLDALELGLVITGTLPVFNITGQENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTL VKSQDERYIDKGNRTYTWTVPVNGTDYSLALVLPTYSFY
YIKAKIEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTTEFLNLF
25 NEFIDRKT PNNPSCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVT DGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
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YTNQIGRFFGEIDPSLMRHLVNI SVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSIADI
LHIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDND SK
30 SFSGLDCGNC SRI FHVEKLMNTNLI FIMVESKGTCPCDTRL LIQAEQTS DGPDPDCMVK

8 - porcine amino acid sequence

MAAGCLLALTTLTLFQSLIGPSSQEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEV
VYNAKDDLDPEKNDSEPGSQRIKPVFIDDANFRQISYQHAAVHIPTDIYEGSTIVLNEL
5 NWT SALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFAKYNKDKKVRVFTFSVGQHNYDRGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTVNYLDALELGLVITGTLPVFNITGQENKTNLKNQLILGVM
10 GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTL VKSQDERYIDKGNRTYTWTVPVNGTDYSLALVLPTYSFY
YIKAKIEETITQARSKKGKMKDSETLKP DNFEESGYTFIAPRDYCNDLKI SDNNT EFL LN F
NEFIDRKTPNNPSCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVT DGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
15 LLKPAVVGIIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNISVYAFNKS YDYQSVCEPGAAPKQGAGHRSAYVPSIADI
LHIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDND SK
SFSGLDCGNC SRI FHVEKLMNTNLI FIMVESKGTCPCDTRLLIQAEQTS DGPDP CDMVKQ
PRYRKGPDVCFDNNAL EDYTD CGGV S

20

9 - porcine amino acid sequence

MAAGCLLALTTLTLFQSLIGPSSQEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEV
VYNAKDDLDPEKNDSEPGSQRIKPVFIDDANFRQISYQHAAVHIPTDIYEGSTIVLNEL
25 NWT SALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFAKYNKDKKVRVFTFSVGQHNYDRGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTVNYLDALELGLVITGTLPVFNITGQENKTNLKNQLILGVM
30 GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
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YIKAKIEETITQARSKKGKMKDSETLKP DNFEESGYTFIAPRDYCNDLKI SDNNT EFL LN F

NEFIDRKTPNNPSCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDDGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
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YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSVDYQSVCEPGAAPKQGAGHRSAYVPSIADI
5 LHIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDK
SFSGVLDCGNCSRIHFHVEKLMNTNLI FIMVESKGTCPCDTRLLIQAEQTS DGPDPDCDMVKQ
PRYRKGPDVCFDNNAL EDYTD CGGVSHHHHHH

10 - human nucleotide sequence

10 ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTTGCTCATCGGCC
CCTCGTCGGAGGAGCCGTTCCCTTCGGCCGTCACTATCAAATCATGGGTGGATAAGATGCA
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15 GGAAGCGGAGAAAGTTCAAGCAGCTCACCAGTGGAGAGAAGATTTTGCAAGCAATGAAGTT
GTCTACTACAATGCAAAGGATGATCTCGATCCTGAGAAAAATGACAGTGAGCCAGGCAGCC
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CGCAGCAGTCCATATTCCTACTGACATCTATGAGGGCTCAACAATTGTGTAAATGAACTC
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20 TGTGGCAGGTTTTTGGCAGTGCCACTGGCCTAGCTCGATATTATCCAGCTTCACCATGGGT
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25 CACCTTGTTCCAAGCAAATGTAAGAAATAAAAAAGTGTTGAAAGACGCGGTGAATAATATCA
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30 AGGTTATTATTATGAAATTCCTTCCATTGGTGCAATAAGAATCAATACTCAGGAATATTTG
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- CATAACCGGCCAATTTGAAAATAAGACAACTTAAAGAACCAGCTGATTCTTGGTGTGATG
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5 GATATTAAAGTGGAGATTCGAAATAAGATGATTGATGGGGAAAGTGGAGAAAAACATTCA
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10 AAGAGATTACTGCAATGACCTGAAAATATCGGATAATAACACTGAATTTCTTTTAAATTTT
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25 CCTGTCCAAGCAGAGCTGCATTACTGAACAAACCCAGTATTTCTTCGATAACGACAGTAAA
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ACTGC
- 30 11 - human nucleotide sequence
ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTTGCTCATCGGCC
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5 GTCTACTACAATGCAAAGGATGATCTCGATCCTGAGAAAAATGACAGTGAGCCAGGCAGCC
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30 AGGATTCGGAAACCTGAAGCCAGATAATTTTGAAGAATCTGGCTATACATTCATAGCACC
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5 TGGTGCCTATGAATCGGGCATTATGGTAAGCAAAGCTGTAGAAATATATATTCAAGGGAAA
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10 TTAATATATCAGTTTATGCTTTTAACAAATCTTATGATTATCAGTCAGTATGTGAGCCCGG
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15 TCATTCAGTGGTGTATTAGACTGTGGAACTGTTCCAGAATCTTTCATGGAGAAAAGCTTA
TGAACACCAACTTAATATTCATAATGGTTGAGAGCAAAGGGACATGTCCATGTGACACACG
ACTGCTCATACAAGCGGAGCAGACTTCTGACGGTCCAAATCCTTGTGACATGGTTAAGC

12 - human nucleotide sequence

20 ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTGTCTCATCGGCC
CCTCGTCGGAGGAGCCGTTCCCTTCGGCCGTCCTATCAAATCATGGGTGGATAAGATGCA
AGAAGACCTTGTCACTGGCAAAAACAGCAAGTGGAGTCAATCAGCTTGTGATATTTAT
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25 GGAAGCGGAGAAAGTTCAAGCAGCTCACCAGTGGAGAGAAGATTTTGCAAGCAATGAAGTT
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30 TGTGGCAGGTTTTTGGCAGTGCCACTGGCCTAGCTCGATATTATCCAGCTTCACCATGGGT
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20 AAGAGATTACTGCAATGACCTGAAAATATCGGATAATAACACTGAATTTCTTTTAAATTC
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25 AAAGGAGCCTAGATAATGATAACTATGTTTTCACTGCTCCCTACTTTAACAAAAGTGGACC
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30 TATACTAATCAGATTGGAAGATTTTTTGGAGAGATTGATCCCAGCTTGATGAGACACCTGG
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5 TGAACACCAACTTAATATTCATAATGGTTGAGAGCAAAGGGACATGTCCATGTGACACACG
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CCTAGATAACCGAAAAGGGCCTGATGTCTGCTTTGATAACAATGTCTTGGAGGATTATACTG
ACTGTGGTGGTGTCTTG

10 13 - human amino acid sequence

MAAGCLLALTTLTLFQSLIGPSSEEPFPSAVTIKSWVDKMQEDLVTAKTASGVNQLVDIY
EKYQDLYTVEPNARQLVEIAARDIEKLLSNRSKALVSLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQRIPVFIEDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL
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15 IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLDSDDFVNVASFNSAQDVSCFQ
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DVLGRPMVLAGDKAKQVQWTVNYLDALELGLVITGTLPVFNITGQFENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDALEN
20 DIKVEIRNKMIDGESGEKTFRTLKVSQDERYIDKGNRTYTWTVPVNGTDYSLALVLPYTSFY
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25 YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSVDYQSVCEPGAAPKQGAGHRSAYVPSVADI
LQIGWWATAAAWSILQQFLLSLTFPRLLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDK
SFSGVLDCGNCRI FHGEKLMNTNLI FIMVESKGTCPDTRL

14 - human amino acid sequence

30 MAAGCLLALTTLTLFQSLIGPSSEEPFPSAVTIKSWVDKMQEDLVTAKTASGVNQLVDIY
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VYYNAKDDLDPEKNDSEPGSQRIPVFIEDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL

NWTSALDEVFKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
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5 DVLGRPMVLADGKAKQVQWNTNVYLDALGLVITGTLPVFNITGQFENKTNLKNQLILGVM
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10 PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
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15

15 - human amino acid sequence

MAAGCLLALTLTLFQSL LIGPSSEEPFPSAVTIKSWVDKMQEDLVT LAKTASGVNQLVDIY
EKYQDLYTVEPNARQLVEIAARDIEKLLSNRSKALVSLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQR IKPVFIEDANFRQISYQHA AVHIPTDIYEGSTIVLNEL
20 NWTSALDEVFKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
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25 GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
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NEFIDRKT PNNPSCNADLINRVLLDAGFTNELVQNYWSKQKNIGVKARFVVTGCGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
30 LLKPAVVGIIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNI SVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSVADI
LQIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDND SK

SFSGVLDCGNC SRI FHGEKLMNTNLI FIMVESKGTCPCDTRLLI QAEQTS DGPNPCDMVKQ
PRYRKGPDVCFDNNVLEDYTD CGGV S

16 - human alpha2 delta-1 amino acid sequence

5 MAAGCLLALTTLTFQSL LIGPSSEEPFPSAVTIKSWVDKMQEDLVT LAKTASGVNQLVDIY
EKYQDLYTVEPN NARQLVEIAARDIEKLLSNRSKALVSLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQR IKPVFIEDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL
NWT SALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLET L SDDDFVN VASFNSNAQDVSCFQ
10 HL VQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLF TDGGE
ERAQEIFNKYNKDKKVRVFRFSVGQHNYERGPIQWMACENKGYYYEIP SIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTVNYLDALELGLVITGTL PVFNITGQFENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLC PNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNK MIDGESGEKTFRTL VKSQDERYIDKGNRTYT WTPVNGTDYSLALVLP TYSFY
15 YIKAKLEETITQARSKKGKMKDSETL KPDNFEESGYTFIAPRDYCN DLKISDNNT EFLN F
NEFIDRKTPNNPSCNADLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVT DGGITRVY
PKEAGENWQENPETYEDSFYK RSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
LLKPAVVG I KIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNI SVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSVADI
20 LQIGWWATAAAWSILQQFLLSLTFPRLL EAVEMEDDDFTASLSKQSCITEQTQYFFDND SK
SFSGVLDCGNC SRI FHGEKLMNTNLI FIMVESKGTCPCDTRLLI QAEQTS DGPNPCDMVKQ
PRYRKGPDVCFDNNVLEDYTD CGGV SGLNPSLWYIIGIQFLLLWL VSGSTHRL L

17 - human alpha2 delta-1 nucleic acid sequence

25 GCGGGGGAGGGGGCATTGATCTTCGATCGCGAAGATGGCTGCTGGCTGCCTGCTGGCCTTG
ACTCTGACACTTTTCCAATCTTTGCTCATCGGCCCCCTCGTCGGAGGAGCCGTTCCTTCGG
CCGTCACTATCAAATCATGGGTGGATAAGATGCAAGAAGACCTTGTCACACTGGCAAAAAC
AGCAAGTGGAGTCAATCAGCTTGT TGATATTTATGAGAAATATCAAGATTTGTATACTGTG
GAACCAAATAATGCACGCCAGCTGGTAGAAATTGCAGCCAGGGATATTGAGAACTTCTGA
30 GCAACAGATCTAAAGCCCTGGT GAGCCTGGCATTGGAAGCGGAGAAAGTTCAAGCAGCTCA
CCAGTGGAGAGAAGATTTTGCAAGCAATGAAGTTGTCTACTACAATGCAAAGGATGATCTC
GATCCTGAGAAAAATGACAGTGAGCCAGGCAGCCAGAGGATAAAACCTGTTTTTCATTGAAG

ATGCTAATTTTGGACGACAAATATCTTATCAGCACGCAGCAGTCCATATTCCTACTGACAT
CTATGAGGGCTCAACAATTGTGTTAAATGAACTCAACTGGACAAGTGCCTTAGATGAAGTT
TTCAAAAAGAATCGCGAGGAAGACCCTTCATTATTGTGGCAGGTTTTTGGCAGTGCCACTG
GCCTAGCTCGATATTATCCAGCTTCACCATGGGTGATAATAGTAGAACTCCAAATAAGAT
5 TGACCTTTATGATGTACGCAGAAGACCATGGTACATCCAAGGAGCTGCATCTCCTAAAGAC
ATGCTTATTCTGGTGGATGTGAGTGGAAGTGTTAGTGGATTGACACTTAACTGATCCGAA
CATCTGTCTCCGAAATGTTAGAAACCCTCTCAGATGATGATTCGTGAATGTAGCTTCATT
TAACAGCAATGCTCAGGATGTAAGCTGTTTTCAGCACCTTGTCCAAGCAAATGTAAGAAAT
AAAAAAGTGTTGAAAGACGCGGTGAATAATATCACAGCCAAAGGAATTACAGATTATAAGA
10 AGGGCTTTAGTTTTGCTTTTGAACAGCTGCTTAATTATAATGTTTCCAGAGCAAACCTGCAA
TAAGATTATTATGCTATTCACGGATGGAGGAGAAGAGAGAGCCCAGGAGATATTTAACAAA
TACAATAAAGATAAAAAAGTACGTGTATTACAGTTTTTCAGTTGGTCAACACAATTATGAGA
GAGGACCTATTCAGTGGATGGCCTGTGAAAACAAAGGTTATTATTATGAAATTCCTTCCAT
TGGTGAATAAGAATCAATACTCAGGAATATTTGGATGTTTTTGGGAAGACCAATGGTTTTA
15 GCAGGAGACAAAGCTAAGCAAGTCCAATGGACAAATGTGTACCTGGATGCATTGGAACCTGG
GACTTGTCACTACTGGAACCTTCCGGTCTTCAACATAACCGGCCAATTTGAAAATAAGAC
AACTTAAAGAACCAGCTGATTCTTGGTGTGATGGGAGTAGATGTGTCTTTGGAAGATATT
AAAAGACTGACACCACGTTTTTACACTGTGCCCCAATGGGTATTACTTTGCAATCGATCCTA
ATGGTTATGTTTTATTACATCCAAATCTTCAGCCAAAGAACCCCAAATCTCAGGAGCCAGT
20 AACATTGGATTTCTTTGATGCAGAGTTAGAGAATGATATTAAAGTGGAGATTCGAAATAAG
ATGATTGATGGGGAAAGTGGAGAAAAACATTCAGAACTCTGGTTAAATCTCAAGATGAGA
GATATATTGACAAAGGAAACAGGACATACACATGGACACCTGTCAATGGCACAGATTACAG
TTTGGCCTTGGTATTACCAACCTACAGTTTTTACTATATAAAAGCCAAACTAGAAGAGACA
ATAACTCAGGCCAGATCAAAAAAGGGCAAAATGAAGGATTCGGAAACCCTGAAGCCAGATA
25 ATTTTGAAGAATCTGGCTATACATTCATAGCACCAAGAGATTACTGCAATGACCTGAAAAT
ATCGGATAATAACACTGAATTTCTTTTAAATTTCAACGAGTTTATTGATAGAAAACTCCA
AACAACCCATCATGTAACGCGGATTTGATTAATAGAGTCTTGCTTGATGCAGGCTTTACAA
ATGAACTTGTCCAAAATTACTGGAGTAAGCAGAAAAATATCAAGGGAGTGAAAGCACGATT
TGTTGTGACTGATGGTGGGATTACCAGAGTTTATCCCAAAGAGGCTGGAGAAAATTGGCAA
30 GAAAACCCAGAGACATATGAGGACAGCTTCTATAAAAGGAGCCTAGATAATGATAACTATG
TTTTCACTGCTCCCTACTTTAACAAAAGTGGACCTGGTGCCTATGAATCGGGCATTATGGT
AAGCAAAGCTGTAGAAATATATATTCAAGGGAACTTCTTAAACCTGCAGTTGTTGGAATT

AAAATTGATGTAAATTCCTGGATAGAGAATTTACCAAACCTCAATCAGAGATCCGTGTG
CTGGTCCAGTTTGTGACTGCAAAAGAAACAGTGACGTAATGGATTGTGTGATTCTGGATGA
TGGTGGGTTTCTTCTGATGGCAAATCATGATGATTATACTAATCAGATTGGAAGATTTTTT
GGAGAGATTGATCCCAGCTTGATGAGACACCTGGTTAATATATCAGTTTATGCTTTTAACA
5 AATCTTATGATTATCAGTCAGTATGTGAGCCCGGTGCTGCACCAAAACAAGGAGCAGGACA
TCGCTCAGCATATGTGCCATCAGTAGCAGACATATTACAAATTGGCTGGTGGGCCACTGCT
GCTGCCTGGTCTATTCTACAGCAGTTTCTCTTGAGTTTGACCTTTCACGACTCCTTGAGG
CAGTTGAGATGGAGGATGATGACTTCACGGCCTCCCTGTCCAAGCAGAGCTGCATTACTGA
ACAAACCCAGTATTTCTTCGATAACGACAGTAAATCATTAGTGGTGTATTAGACTGTGGA
10 AACTGTTCCAGAATCTTTCATGGAGAAAAGCTTATGAACACCAACTTAATATTCATAATGG
TTGAGAGCAAAGGGACATGTCCATGTGACACACGACTGCTCATAACAAGCGGAGCAGACTTC
TGACGGTCCAAATCCTTGTGACATGGTTAAGCAACCTAGATACCGAAAAGGGCCTGATGTC
TGCTTTGATAACAATGTCTTGGAGGATTATACTGACTGTGGTGGTGTCTTCTGGATTAAATC
CCTCCCTGTGGTATATCATTGGAATCCAGTTTCTACTACTTTGGCTGGTATCTGGCAGCAC
15 ACACCGGCTGTTATGACCTTCTAAAAACCAATCTGCATAGTTAAACTCCAGACCCTGCCA
AAACATGAGCCCTGCCCTCAATTACAGTAACGTAGGGTCAGCTATAAAATCAGACAAACAT
TAGCTGGGCCTGTTCCATGGCATAACACTAAGGCGCAGACTCCTAAGGCACCCACTGGCTG
CATGTCAGGGTGTGAGATCCTTAAACGTGTGTGAATGCTGCATCATCTATGTGTAACATCA
AAGCAAAATCCTATACGTGTCTCTATTGGAAAATTTGGGCGTTTGTGTTGCATTGTTGG
20 T

18 - nucleotide sequence

GGGGATTGATCTTCGATCGCG

25 19 - nucleotide sequence

CTGAGATTGGGGTTCTTTGG

20 - nucleotide sequence

TCGCCACCATGGCTGCTGGCTGCCTGCTG

30

21 - nucleotide sequence

TCGGAATTCCTCAGTGATGGTGATGGTGATGAGAAACACCACCACAGTCGGT